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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/990,976	11/21/2001	Indra Laksono	VIXS.0100120	4211

29331 7590 11/21/2006

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EXAMINER	
WONG, ALLEN C	

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 11/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/990,976	LAKSONO, INDRA	
	Examiner	Art Unit	
	Allen Wong	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 September 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *26-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *49* is/are allowed.

6)☒ Claim(s) *26-34 and 37-46* is/are rejected.

7)☒ Claim(s) *35,36,47 and 48* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 9/13/06 have been fully read and considered but they are not persuasive.

Regarding lines 4-7 and lines 11-19 on page 3 of applicant's remarks about claim 26, applicant states that Keith does not disclose or suggest the table that comprises a plurality of entries, each entry comprising an identifier associated with a corresponding memory location storing corresponding macroblock information. The examiner respectfully disagrees. In column 42, line 66 to column 43, line 15, Keith discloses the lookup table is accessed or indexed to retrieve data when needed or called upon for retrieval. Keith discloses the use of pointers to indicate the position of a value from the lookup table or index table of the entry of the block portion, in that the pointers are used to locate the block position within the index table, as disclosed in column 42, lines 11-23 and column 42, line 66 to column 43, line 15. Thus, Keith discloses a first index table comprising a plurality of entries, each entry comprising an identifier associated with a corresponding memory location storing corresponding macroblock information.

Regarding line 29 on page 3 to line 6 on page 4 of applicant's remarks, applicant asserts that Keith and Youn fail to disclose "accessing a first plurality of macroblock information in a first order based on identifiers accessed from a first subset of the plurality of entries of the first index table". The examiner respectfully disagrees. Keith discloses decoding the video information from the lookup table storing data pertaining to the macroblock data that includes quantization level and motion vector data listed in a

certain order, whereby the macroblock data can be ascertained in a first order, a second order, and so on as needed by utilizing pointers or identifiers to achieve the task of accessing a first plurality of macroblock data from the first subset of data stored in the entries of the index table, as disclosed in column 42, lines 11-23 and column 42, line 66 to column 43, line 15. Thus, Keith discloses "accessing a first plurality of macroblock information in a first order based on identifiers accessed from a first subset of the plurality of entries of the first index table".

Regarding lines 16-19 on page 4 of applicant's remarks about claim 41, applicant contends that Keith does not disclose the above reproduced table is generated, and does not disclose index table generator having an input to receive a size indicator of a destination image and an output to provide a representative of an index table. The examiner respectfully disagrees. The aforementioned table is already disclosed as stated above and in the rejection below. In column 42, line 66 to column 43, line 15, Keith discloses the lookup table is accessed or indexed for retrieving information, and that the lookup table is used for accessing or indexing in order to store pertinent information that identifies a certain portion of plurality of macroblock data, and that the image size is taken into account for obtaining a size indicator of the destination image so as to output a representative of the index table, as illustrated in figure 15. Thus, Keith discloses the index table and the index table generator having an input to receive a size indicator of a destination image and an output to provide a representative of an index table.

Regarding line 27 on page 4 to line 4 on page 5 of applicant's remarks, applicant states that Keith and Youn do not disclose "an index table generator having an input to receive a size indicator of a destination image and an output to provide data representative of an index table identifying a first portion of the plurality of source macroblock information to be used to generate a first destination source motion vector, wherein the index table is based on the size indicator of the destination image". The examiner respectfully disagrees. In column 42, line 66 to column 43, line 15, Keith discloses the lookup table is accessed or indexed for retrieving information, and that the lookup table is used for accessing or indexing in order to store pertinent information that identifies a certain portion of plurality of macroblock data, and that the image size is taken into account for obtaining a size indicator of the destination image so as to output a representative of the index table, as illustrated in figure 15. Thus, Keith discloses the index table and the index table generator having an input to receive a size indicator of a destination image and an output to provide a representative of an index table.

Keith does not specifically disclose generate a first destination source motion vector. However, Youn's figure 12 discloses the transcoding of image data, wherein the input source motion vector data 626 enters into the motion vector circuits 1204, 1202 and 1206, and that the output is considered to be the destination source motion vector 1206. Thus, Youn teaches the generation of a first estimated destination motion vector. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Keith and Youn, as a whole, for minimizing hardware and software complexity and requirements for accurately, efficiently encoding and decoding MPEG

image data to provide high quality images for display, as disclosed in Youn's column 2, lines 37-40.

Dependent claims 27-34 and 42-46 are rejected for at least similar reasons as claims 26 and 41. Thus, claims 26-34 and 41-46 are rejected for reasons as explained in the above paragraphs and in the rejection below.

Regarding lines 22-25 on page 5 of applicant's remarks, applicant states that Keith does not disclose or suggest the table that comprises a plurality of entries, each entry comprising an identifier associated with a corresponding memory location storing corresponding macroblock information. The examiner respectfully disagrees. In column 42, line 66 to column 43, line 15, Keith discloses the lookup table is accessed or indexed to retrieve data when needed or called upon for retrieval. Keith discloses the use of pointers to indicate the position of a value from the lookup table or index table of the entry of the block portion, in that the pointers are used to locate the block position within the index table, as disclosed in column 42, lines 11-23 and column 42, line 66 to column 43, line 15. Thus, Keith discloses a first index table comprising a plurality of entries, each entry comprising an identifier associated with a corresponding memory location storing corresponding macroblock information.

Regarding line 28 on page 5 to line 5 on page 6 of applicant's remarks about claim 37, applicant states that Keith and Chen do not disclose or suggest "determining an index table based on a video source resolution and a video destination resolution, wherein the index table comprises a plurality of entries, each entry comprising an identifier associated with a memory location storing source macroblock information for a

corresponding source macroblock". The examiner respectfully disagrees. In column 42, line 66 to column 43, line 15, Keith discloses the lookup table is accessed or indexed to retrieve data when needed or called upon for retrieval. Keith discloses the use of pointers to indicate the position of a value from the lookup table or index table of the entry of the block portion, in that the pointers are used to locate the block position within the index table, as disclosed in column 42, lines 11-23 and column 42, line 66 to column 43, line 15. Thus, Keith discloses a first index table comprising a plurality of entries, each entry comprising an identifier associated with a corresponding memory location storing corresponding macroblock information.

Keith does not specifically disclose the index table based on video source resolution and a video destination resolution. However, Chen's figure 8 discloses using a transcoder for converting image data from one video source resolution to another resolution in that the input is the 4:2:2 bitstream and the output is the 4:2:0 bitstream, and, the Q-matrices 385 and 390 contain information regarding quantization values and other pertinent image data which must be stored in a quantization lookup table or index table. Thus, Chen teaches the index table based on video source resolution and a video destination resolution. Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Keith and Chen, as a whole, for precisely and efficiently decoding and coding image data so as to provide high quality image display, as disclosed in Chen's column 4, lines 38-48.

Dependent claims 38-40 are rejected for at least similar reasons as claim 37. Claims 37-40 are rejected for reasons as stated above and in the rejection below.

Thus, the rejection is maintained.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 26-34 and 41-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keith (5,493,514) in view of Youn (6,466,623).

Regarding claims 26 and 44, Keith discloses a method and system comprising:

means for accessing a first index table comprising a plurality of entries, each entry comprising an identifier associated with a corresponding memory location storing corresponding macroblock information (col.42, ln.66 to col.43, ln.15; lookup table is accessed or indexed; col.42, ln.11-23 and col.42, ln.66 to col.43, ln.15; Keith discloses the use of pointers to indicate the position of a value from the lookup table or index table of the entry of the block portion); and

means for accessing a first plurality of macroblock information in a first order based on identifiers accessed from a first subset of the plurality of entries of the first index table, wherein the first plurality of macroblock information is associated with a first source macroblock and includes motion vector and quantization information (col.42, ln.11-23 and col.42, ln.66 to col.43, ln.15; Keith discloses video decoding the information from the lookup table that stores data pertaining to macroblock data like quantization level and motion vector data in a certain order).

Although Keith does not specifically disclose generating a first estimated destination motion vector based on the first plurality of macroblock information, however, Youn teaches generating a first estimated destination motion vector based on the first plurality of macroblock information (fig.12, note Youn discloses the transcoding of image data where element 626 is the input source motion vector data that enters into the motion vector circuits 1204, 1202 and 1206, and that the output of element 1206 is considered to be the estimated destination motion vector). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Keith and Youn, as a whole, for minimizing hardware and software complexity and requirements for accurately, efficiently encoding and decoding MPEG image data to provide high quality images for display (Youn col.2, ln.37-40).

Note claims 27-31 and 45-46 have similar corresponding elements.

Regarding claims 32-34, Keith discloses wherein the index table includes an end of macroblock indicator to indicate a portion of the index table associated with a destination macroblock (col.42, ln.11-23 and col.42, ln.66 to col.43, ln.15; the pointer is used to index the table for indicating the position of a value from the lookup table or index table of the entry of the block portion).

Regarding claims 41-42, Keith discloses a system comprising:

a video input to receive source video data (fig.4, note input frame is entered);

a video input controller coupled to the video input to determine macroblock information corresponding to the receive source video data, wherein the macroblock information includes motion vector and quantization information (fig.4, element 404 is

the unit that determines the macroblock information data by classification, and in col.41, ln.28-34, Keith discloses the macroblock information includes quantization data and motion vector data);

a device coupled to the video input controller to store a plurality of source macroblock information corresponding to the source video data at corresponding memory locations (col.42, ln.66 to col.43, ln.15; note lookup table is accessed or indexed); and

an index table generator having an input to receive a size indicator of a destination image and an output to provide data representative of an index table identifying a first portion of the plurality of source macroblock information to be used, wherein the index table is based on the size indicator of the destination image (col.42, ln.66 to col.43, ln.15; note lookup table is accessed or indexed to store information pertaining to identify a certain portion of plural macroblock data, and that the image size is accounted for as shown in fig.15).

Although Keith does not specifically disclose generate a first destination source motion vector, however, Youn teaches generate a first estimated destination motion vector (fig.12, note Youn discloses the transcoding of image data where element 626 is the input source motion vector data that enters into the motion vector circuits 1204, 1202 and 1206, and that the output of element 1206 is considered to be the destination source motion vector). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Keith and Youn, as a whole, for minimizing hardware and software complexity and requirements for accurately, efficiently encoding and

decoding MPEG image data to provide high quality images for display (Youn col.2, ln.37-40).

Keith does not specifically disclose the system further comprising: a first memory controller. However, Youn teaches the use of a memory controller (in the embodiment of fig.3, note element 34 is the motion estimator that goes to memory 326 to access and retrieve source macroblock data, and that the estimator 324 uses the source macroblock data to generate motion vector data, thus, the function of the second memory control portion is met since source macroblock data is retrieved, and where encoder element 316 eventually obtains the image data and prepares for coding). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Keith and Youn, as a whole, for minimizing hardware and software complexity and requirements for accurately, efficiently encoding and decoding MPEG image data to provide high quality images for display (Youn col.2, ln.37-40).

Regarding claim 43, Keith does not specifically disclose a second memory controller and an encoder coupled to the second memory controller. However, Youn teaches the use of a memory controller and an encoder portion (in the embodiment of fig.3, note element 34 is the motion estimator that goes to memory 326 to access and retrieve source macroblock data, and that the estimator 324 uses the source macroblock data to generate motion vector data, thus, the function of the second memory control portion is met since source macroblock data is retrieved, and where encoder element 316 eventually obtains the image data and prepares for coding). Therefore, it would have been obvious to one of ordinary skill in the art to combine the

teachings of Keith and Youn, as a whole, for minimizing hardware and software complexity and requirements for accurately, efficiently encoding and decoding MPEG image data to provide high quality images for display (Youn col.2, ln.37-40).

Claim 37-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Keith (5,493,514) in view of Chen (6,259,741).

Regarding claim 37, Keith discloses a method comprising:

storing source macroblock information for each source macroblock of a plurality of source macrblocks (col.42, ln.66 to col.43, ln.15; lookup table is accessed or indexed for storing video source macroblock information);

determining an index table, wherein the index table comprises a plurality of entries, each entry comprising an identifier associated with a memory location storing source macroblock information for a corresponding source macroblock (col.42, ln.11-23 and col.42, ln.66 to col.43, ln.15; Keith discloses video decoding the information from the lookup table or index table that stores data pertaining to macroblock data like quantization level and motion vector data in a certain order); and

storing the index table (col.42, ln.66 to col.43, ln.15; note lookup table is accessed or indexed for storing video source macroblock information).

Although Keith does not specifically disclose the index table based on video source resolution and a video destination resolution, however, Chen teaches the index table based on video source resolution and a video destination resolution (fig.8, note Chen teaches the use of a transcoder for converting image data from one video source resolution to another resolution in that the input is the 4:2:2 bitstream and the output is

the 4:2:0 bitstream, and, the Q-matrices 385 and 390 contain information regarding quantization values and other pertinent image data which must be stored in a quantization lookup table or index table). Therefore, it would have been obvious to one of ordinary skill in the art to combine the teachings of Keith and Chen, as a whole, for precisely and efficiently decoding and coding image data so as to provide high quality image display (Chen col.4, ln.38-48).

Regarding claims 38-40, Keith discloses the use of a data instruction packet (col.42, ln.11-23; note data bitstream comprises instructions to identify the location of a the index table, where pointer values are included in the instruction data). Although Keith does not specifically disclose the use of a transcoder, however, Chen teaches the use of a transcoder (see fig.8 and col.5, ln.8-10; the transcoder comprises the decoder portion and the encoder portion as seen when the image data is variable length decoded at 305, and then, after further processing, variable length encoded at 395, thus, the image data is transcoded).

Allowable Subject Matter

1. Claim 49 is allowed.

The following is a statement of reasons for the indication of allowable subject matter: The prior art does not specifically disclose the combination of limitations as disclosed in claim 49: a method comprising: accessing a first index table; accessing a first plurality of macroblock information in a first order at a video decoder to generate a first decoded image, wherein the first order is based upon the first index table and the first plurality of macroblock information is associated with a source macroblock;

processing the first plurality of macroblock information to generate a first estimated destination motion vector; accessing a second index table; accessing a second plurality of macroblock information in a second order at the video decoder to generate a second decoded image, wherein the second order is based upon the second index table and the second plurality of macroblock information is associated with a source macroblock; processing the second plurality of macroblock information to generate a second estimated destination macroblock information; and generating a first macroblock based on the first estimated destination vector and a second macroblock based on the second estimated destination vector, wherein the first and second macroblocks are to be displayed simultaneously.

1. Claims 35-36 and 47-48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

2. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Allen Wong whose telephone number is (571) 272-7341. The examiner can normally be reached on Mondays to Thursdays from 8am-6pm Flextime.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James J. Groody can be reached on (571) 272-7418. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Allen Wong
Primary Examiner
Art Unit 2621

11/16/06